

A NEW SPECIES OF *PIRUNA* FROM OAXACA, MEXICO (HESPERIIDAE)

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ABSTRACT. *Piruna mullinsi* is described from Oaxaca, Mexico, the type series consisting of 76 males and 2 females collected by John Kemner. The new species is differentiated from its closest ally *P. sina* Freeman 1970 by morphological and genitalic characters. Holotype and genitalia of a paratype are illustrated.

Additional key words: *Piruna mullinsi*, *Piruna sina*, genitalia.

While in the process of collecting Lepidoptera in Mexico, John Kemner located a grassy area near a ravine on highway 175, 8 km north of the city of Oaxaca, Oaxaca, Mexico, ca. 1800 m elevation, where six species of *Piruna* (Evans 1955) were flying. What was perhaps the most common species there turned out to be undescribed.

Piruna mullinsi Freeman, new species (Figs. 1-3)

Male upper side. Primaries dark brown, overscaled entirely with lighter bronzy scales except over the veins so as to produce a streaked appearance. There are usually six, light tan, hyaline spots: the largest in the middle of space 2 beyond a small spot near the base of space 2; small roundish spots in spaces 3, 6, and 8; and a well developed upper cell spot, almost directly over the basal spot in space 2. Rarely, a minute dot appears in the lower cell; in space 1b, outward from the spot in space 2; and in space 7. Outer margin dark brown from apex to anal angle. Fringe light brown, uncheckered. Secondaries dark brown overscaled submarginally with lighter bronzy scales that again shun the veins, leaving them dark. There are two, light tan, opaque spots at the end of the cell and another near the base of space 2, which may be absent in some specimens. Fringe light brown, uncheckered.

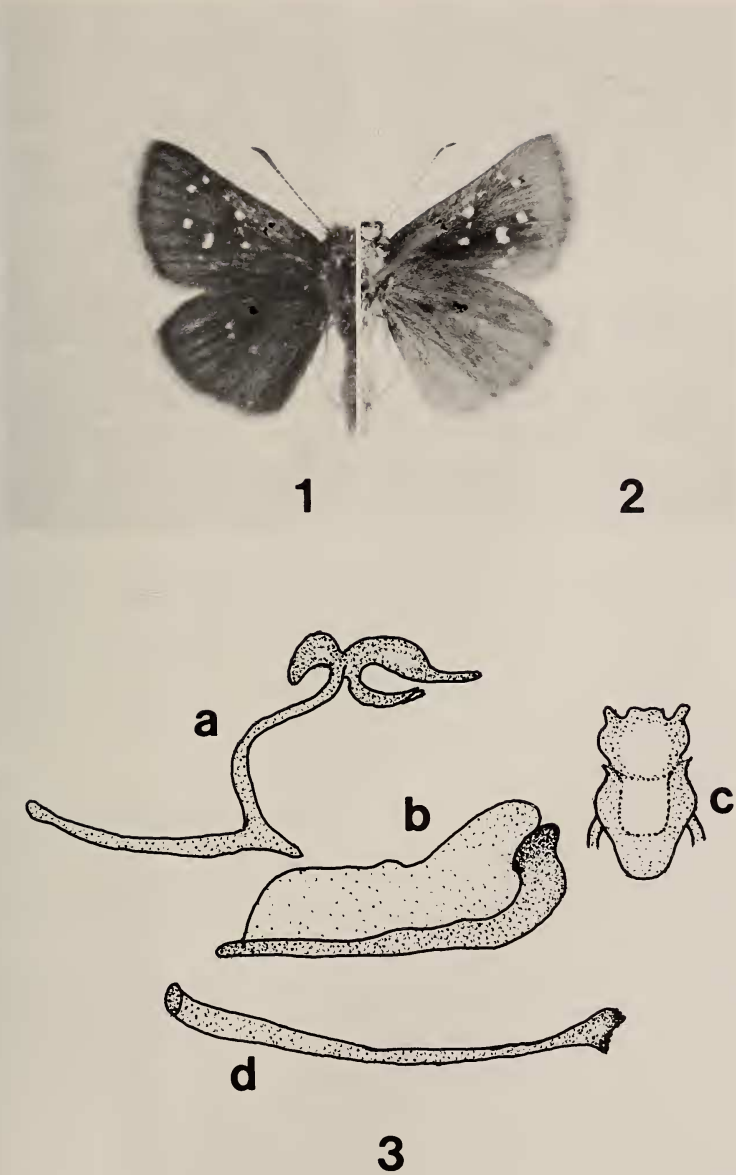
Male under side. Primaries lighter brown than above, with the submarginal area and apex ferruginous. All spots are better defined than above. Usually there is a sordid white spot in space 1b, directly below the larger spot in space 2, and another in space 10, directly above the cell spot. Space 1 lighter in coloration than rest of wing. Veins dark at base of fringe. Secondaries uniform light ferruginous becoming darker basad. The two spots at the end of the cell are barely visible and absent in some specimens. Rarely will the spot near the base of space 2 be visible. There may also be a faint suggestion of a row of submarginal spots. Veins dark at base of fringe.

Body: Palpi, head, thorax, and abdomen darker above, lighter beneath. Legs mostly bronzy. Antennae: shaft blackish brown and checkered with cream above, creamy below; club blackish brown above, creamy below, with the nudum yellowish brown.

Wing measurements: Holotype. Primaries: base to apex, 12 mm; apex to outer angle, 8 mm; outer angle to base, 10 mm. Secondaries: base to end of vein 3, 10.5 mm, center of costa to anal angle, 8 mm. Total expanse: 24 mm. Average total expanse of paratypes: 24 mm (n = 77).

Female. Very similar to the males but with the spots slightly larger; both specimens have a lower cell spot.

Types. Holotype, male, Mexico: Oaxaca; 8 km north of Oaxaca, Hwy. 175, ca. 1800 m elev., 17 August 1988 (leg. John Kemner) in the American Museum of Natural History, New York. There are 75 male and 2 female paratypes all from the type locality except



FIGS. 1-3. 1, 2, Upper side (1) and under side (2) of *Piruna mullinsi* Freeman, holotype, male, Mexico: Oaxaca, 8 km north of the city of Oaxaca, ca. 1800 m elev., 17 August 1988 (leg. John Kemner); 3, *Piruna mullinsi*, male genitalia of paratype (Genitalia Vial H-904), same location and collector as holotype, 16 July 1988: a) tegumen, uncus, gnathos, vinculum, and saccus in lateral view; b) right valva, inner surface; c) tegumen and uncus in dorsal view; d) aedeagus in lateral view.

one male from Oaxaca: 27 km east of Mitla, San Lorenzo, 16 June 1989, all specimens collected by John Kemner during July and August 1987-89. Three paratypes will be placed in the following collections: American Museum of Natural History, New York; National Museum of Natural History, Washington, D.C.; The Carnegie Museum of Natural History, Pittsburgh, Pennsylvania; Allyn Museum of Entomology, Sarasota, Florida; private collections of Douglas Mullins and Jim Brock of Tucson, Arizona.

Etymology. I take pleasure in naming this new species for Douglas Mullins, Tucson, Arizona, who has collected many fine skippers in Mexico and has been of great help in my study of *Piruna*.

Diagnosis

The species most closely related to *Piruna mullinsi* is *P. sina* Freeman (Freeman 1970), from which it is differentiated by the following characters:

(1) In both *mullinsi* and *sina* the ground color of the upper side of both primaries and secondaries is dark brown; paler overscaling is sparse in *sina* but relatively heavy in *mullinsi*, where it occurs all over the primaries and submarginally over about 40% of the secondaries on both wings, but not on the veins and spots. Thus does *mullinsi* appear "streaked" whereas *sina* does not.

(2) The primary spots look bright white in *sina* because the white scales that form them lie flat on the wing, creating an opaque spot that reflects light well, whereas in *mullinsi* some of these white scales are relatively colorless and rise from the plane of the wing, letting light through the wing membrane and creating a semihyaline-to-hyaline spot that actually looks a little duller (light tan).

(3) On the lower side of the primaries of *sina* the ground color is dull brown, with the subapical area slightly ferruginous and space 1 being only slightly lighter than the rest of the wing, whereas in *mullinsi* the ground color is warm brown and the submarginal area is ferruginous from the apex to the outer angle and space 1 is much lighter than the rest of the wing.

(4) On the lower side of the secondaries of *sina* the ground color is uniform light chocolate brown, with a distinct white cell spot, a light brown discal spot in space 2, two similar spots at the end of the cell, and an indistinct spot in space 7 directly over the spots at the end of the cell; and there is usually a submarginal row of 4 to 5 sordid white spots in spaces 1 to 5, whereas in *mullinsi* the ground color is ferruginous becoming slightly darker over the discal and basal areas and the spots are not as well defined as usually the two spots at the end of the cell are the only ones that are well defined. Of the 78 specimens of *mullinsi* examined none had a distinct cell spot, whereas of the 30 specimens of *sina* examined all had a cell spot.

(5) Ten male paratypes were dissected and their genitalia compared with three dissections of *sina* with the following observations: (a) tegu-

men, uncus, gnathos, vinculum, and saccus were very similar; (b) lower distal division of the valva much broader at its upturned and finely dentate distal end in *mullinsi* than in *sina*. Moreover, in *mullinsi*, the distal end of the lower distal division of the valva not entirely medial to the upper distal division as it is in *sina*; (c) the distal end of the aedeagus is broader and blunter in *sina* than in *mullinsi*, and the aedeagus is somewhat longer in *mullinsi* than in *sina*.

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